REMARKS

Claims 1-23 were pending. Claims 1, 3, 4, 9, 11, 12, 17, 19 and 20 have been amended. Accordingly, claims 1-23 remain pending subsequent entry of the present amendment.

In the present Office Action, claims 3-5 were rejected under 35 U.S.C. § 112 for lack of insufficient antecedent basis. Applicant has amended claim 3 in a manner which overcomes this rejection.

Claims 1-8 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In particular, it is suggested that the language of the claims raise the question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art. Applicant respectfully traverses these rejections and submits that the recitation of features directed to a multi-level caching system, branch predictions, and branch prediction information make clear and lead to the inescapable conclusion that the claims are directly tied to a technological art. Nevertheless, Applicant has amended the preamble of claim 1 to indicate that the claims are directed to a branch prediction method. Accordingly, Applicant submits claims 1-8 and 21 comply with 35 U.S.C. § 101.

Claims 1, 2, 9, 10, 21 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Perleberg et al., "Branch Target Buffer Design and Optimization." Applicant traverses at least some of the above rejections.

Applicant first notes that Perleberg was cited (paragraphs 9-11) as teaching the features of claims 21-23 "wherein said second level cache and said first level cache do not store duplicate information." However, Perleberg explicitly teaches the opposite. For example, Perleberg teaches:

"To test this concept, four multilevel BTE3 designs are examined. The multilevel BTB designs have up to three levels. The first level, the highest performance level, contains a branch tag, prediction bits, target address, and target instruction bytes for each entry. The second level, the medium performance level, contains a branch tag (one design eliminates this), prediction bits, and a target address for each entry." (Perleberg, page 409, column 1, lines 9-15).

As seen from the above, Perleberg teaches that the first and second level caches do, in fact, store duplicative information. For example, both store at least prediction bits and a target address for each entry. Accordingly, Applicant requests withdrawal of these rejections.

In paragraph 21 of the Office Action, the examiner discusses Applicant's prior arguments and construes various claim terms in a particular way to suggest an equivalence between claim features and the cited art. For example, in Applicant's prior amendment, it was noted that Perleberg does not teach or suggest "generating third branch prediction information indicative of a type of branch instruction" as recited in claim 1. In the context of the claimed invention and accompanying description, Applicant believes it is clear that "a type of branch instruction" refers to the type of instruction (i.e., as indicated for example by its opcode) and not a decision concerning how the instruction is handled. However, the examiner suggests that if a branch instruction is taken then the type of branch instruction is of the type "taken". Applicant does not agree with such a construction and submits the whole of the claims in view of the description make clear what is meant by type in this context. However, given Applicant's present claim amendments, it is believed the above rejections are rendered moot.

In the present amendment, Applicant has amended each of the claims to generally recite "receiving said second branch prediction information; receiving a group of instructions corresponding to the fetch address; utilizing the second branch prediction information to identify one or more predicted taken branches within the group of instructions; generating third branch prediction information by decoding each of the identified one or more predicted taken branches to determine a type of each of the one or

<u>more predicted taken branches</u>." (emphasis added). Applicant believes the amended claim language clearly distinguishes over all of the cited art. It is noted that in paragraph 23 of the Office Action, the examiner objected to arguments previously made by the Applicant as concerning features which appear in the description, but not in the claim language itself. Accordingly, Applicant has directly incorporated features into the claim language to overcome this objection. As each of claims 1-23 include features similar to that highlighted above, each of claims 1-23 are patentably distinct from the cited art, either singly or in combination. Accordingly, the 35 U.S.C. § 103(a) rejections directed to claims 3-8 4, 11-20, and 23 are likewise overcome.
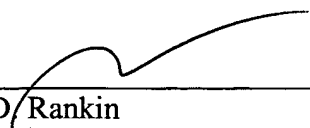
Applicant believes the application to be in condition for allowance. Should the examiner believe there are issues remaining, a telephone interview is requested by the below signed representative at (512) 853-8866 in order to facilitate a resolution.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5500-67400/RDR.

Respectfully submitted,

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